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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/081,165 | 02/22/2002 | Andreas Lubbertus Aloysius Johannes Dekker | 41942-04510 | 8432 |

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EXAMINER

MALLARI, PATRICIA C

ART UNIT PAPER NUMBER

3736

DATE MAILED: 05/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,165

Applicant(s)

DEKKER, ANDREAS LUBBERTUS
ALOYSIUS JOHA

Examiner

Patricia C. Mallari

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 24-32 and 36 is/are rejected.
- 7) ☒ Claim(s) 21-23 and 33-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/22/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

The drawings filed 2/22/02 are objected to as being informal. The informal drawings filed in this application are acceptable for examination purposes only. When the application is allowed, applicant will be required to submit new formal drawings.

Claim Objections

Claim 28 is objected to because of the following informalities: on line 2, "operated for providing" should be replaced with "operative to provide". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13, 19, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 8, 9, 19, and 20 are written in improper method claim format. Method claims must be active. For example, claim 9 should read "A method as set forth in claim 7, wherein monitoring information related to heart rate comprises acquiring at least a pulsatile portion of the pleth signal and determining information regarding a variation in heart rate over time related to the first and second components."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 7, 13-16, 18, 20, 24-27, 29, 30, 32, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Jay. Jay discloses an optical plethysmograph 10 used to acquire plethysmographic waveform data from a patient 130. The waveform is digitized and collected within a PDSP 16450 bucket buffer 30, the output from which is projected onto a PDSP 16510 FFT processor 40. The two signals of interest in the FFT output are a) the respiratory component of the original pulsatile waveform (Sin X) and b) a signal with a frequency corresponding to the patient's heart rate, with a superimposed sinusoidal signal (Sin A Sin Y), where both signals relate to respiratory sinus arrhythmia and where (Sin A Sin Y) signal relates to the Mayer wave. The signal (Sin A Sin Y) representative of a heart rate is connected to frequency counter 60 and LED display system 90 to indicate pulse rate. Both signals (Sin A Sin Y) and (Sin X) are presented to the stand-alone PDSP 16510 FFT processor 40' which performs a cross-correlation function identifying the degree of correlation between decreasing pulsatile amplitude with inspiration (pulsus paradoxus). A signal comparator 140 compares the output from FFT processor 40' to pulse rate waveform (Sin Y) and, along with a second frequency counter 60', determines a respiratory rate therefrom (Fig. 4). The method of using the apparatus of Jay is inherently disclosed in the delineation of the apparatus itself.

Claims 1-9, 13-20, 24-32, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kronberg et al. Kronberg teaches a photoplethysmographic monitoring system having photoplethysmographic reflex sensors 1. LEDs 5 are used as the radiation sources, whereby two or more such LEDs can be used for the additional measurement of predetermined blood components. The modified radiation component received from the tissue is picked up by photodiodes (PHDs) 6 as the receivers. The signals are pre-processed at Point A. To determine measurements derived from the arterial pulse, including pulse frequency, pulse perfusion at 805 nm-single wavelength photometry, and oxygen saturation of hemoglobin with at least two wavelengths photometry by means of pulse oximeter 14, low frequency signal changes caused by respiration are eliminated in a high pass filter 11 at Point B. At Point C, a respiration monitor 13 receives a respiration signal, which is the difference of the signals at Point A and B, from which the frequency of breathing and depth of breathing can be obtained. Both respiratory frequency and pulse frequency are related to respiratory sinus arrhythmia, and the pulse frequency is related to the Mayer wave (figs. 1-4, 8, and 9).

Allowable Subject Matter

Claims 21-23 and 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US Patent No. 6358201 to Childre et al.

US Patent No. 6236872 to Diab et al

US Patent No. 5862805 to Nitzan


US Patent No. 5396893 to Oberg et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia C. Mallari whose telephone number is (703) 605-0422. The examiner can normally be reached on Mon-Fri 9:30 am-7:00 pm (alternate Fri. off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max F. Hindenburg can be reached on (703) 308-3130. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8117 for regular communications and (703) 305-3590 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

pcm
May 19, 2003


MAX F. HINDENBURG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700